**Infinite Limits**

1. What is the meaning of an infinite limit? Explain why infinity is or is not a real number.
2. What is an asymptote? What makes an asymptote? What makes a hole?
3. Come up with a function that has an asymptote at x = 1 and a hole at x = -2.

*f(x)=­­­­­­­­­­­­­­­­*

1. Explain why (or why not) every rational function must have at least one asymptote.
2. In the space below, draw a graph that has the following properties:
   1. An infinite limit at x = -2
   2. does not exist

For the next three problems:

a. Find all vertical asymptotes and holes (if any) for each

b. Discuss the intervals of continuity

1. 7. 8.

9. 10.

11. 12.

13. The cost (in millions of dollars) for our government to seize p% of an illegal drug can be modeled by the function .

a. explain why this model only works for p between 0 and 100

b. find the cost for 25% , 50% , and 75%

c. find and interpret its meaning